



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
911 NE 11<sup>th</sup> Avenue  
Portland, Oregon 97232-4181



In Reply Refer to:  
FWS/IR09/IR12/AES/Recovery/TE-72492B-1

September 9, 2020

Thom A. Fischer, Project Manager  
Electron Hydro, LCC  
19318 Electron Road East  
Orting, Washington 98360

Dear Mr. Fischer:

On July 29, 2020, the U.S. Fish and Wildlife Service (Service) was notified by the Puyallup Tribe of Indians of a probable Endangered Species Act section 10(a)(1)(A) recovery permit (permit) violation by Electron Hydro, LCC at the Electron Hydro Dam during fish recovery/rescue activities necessitated by a scheduled drawdown and cleaning of the forebay facility. These activities are described in your permit (TE-72492B-1) under Special Term and Condition 6(d), entitled Fish Recovery/Rescue Activities (During Scheduled and Unscheduled Project Outages). As a result, the Service is now proposing to suspend your permit, pursuant to 50 Code of Federal Regulations (CFR) 13.27 and for the reasons outlined below, until we can determine if Electron Hydro, LCC can correct the deficiencies that led to the probable violation.

Based on information provided to us by biologists from both the Puyallup Tribe and the Washington Department of Fish and Wildlife who were on-site during the fish recovery/rescue activities, it is our understanding that the Special Terms and Conditions of your permit specific to conducting these activities [6(d)(i-iii)], and the related activities of bull trout handling [6(e)(i-vi)] and release [6(g)(i)], were either not implemented or only partially implemented during your actions taken on July 29, 2020.

Based on information provided to us:

- 1) It is our understanding that during these activities ambient air temperatures exceeded 80 degrees Fahrenheit, inconsistent with Special Term and Condition 6(d)(i);
- 2) It is our understanding that during these activities an insufficient number of both transport vehicles/tankers and trained personnel were provided on site to handle a worst-case scenario, inconsistent with Special Term and Condition 6(d)(ii);
- 3) It is our understanding that during these activities a healthy environment was not provided for bull trout held in tanks, inconsistent with Special Term and Condition 6(e)(ii-iii);

INTERIOR REGION 9  
COLUMBIA-PACIFIC NORTHWEST

IDAHO, MONTANA\*, OREGON\*, WASHINGTON

\*PARTIAL

INTERIOR REGION 12  
PACIFIC ISLANDS

AMERICAN SAMOA, GUAM, HAWAII, NORTHERN  
MARIANA ISLANDS

- 4) It is our understanding that during these activities a number of bull trout that were collected and showing signs of stress or injury were not held until they could maintain themselves and no suitable holding tanks were available, inconsistent with Special Term and Condition 6(g)(i);
- 5) It is our understanding that during these activities many bull trout mortalities or likely mortalities were released directly back into the river and not retained and preserved, inconsistent with Special Term and Condition 7(c) and (d);
- 6) It is our understanding that no fin clips were taken from the bull trout that were encountered, inconsistent with Special Term and Condition 6(e)(vi);
- 7) Electron Hydro, LCC did not immediately cease the activity resulting in injury or death, inconsistent with Special Term and Condition 7(a); and
- 8) Electron Hydro, LCC did not notify the Service within 24 hours upon exceeding the unintentional take limit nor did it follow up in writing to the Service within 3 working days, inconsistent with Special Term and Condition 7(b).

Please refer to the enclosed permit, TE-72492B-1, and the Washington Department of Fish and Wildlife's Fish Kill Report for additional information.

It is also our understanding that a minimum of 7 bull trout mortalities (and potentially more) occurred during fish recovery/rescue activities, which exceeds the unintentional take limit of 2 individuals with no more than 1 adult ( $\geq 305$  millimeters) authorized under your permit (Special Term and Condition 7; Unintentional Take Limitations). At least 9 bull trout mortalities were reported to us by the Puyallup Tribe with photographic evidence of at least 7 dead individuals, of which 3 were adult-sized fish. According to the Washington Department of Fish and Wildlife's Fish Kill Report, "many" of the unspecified number of stranded bull trout that were collected and released downstream were dead. The report also notes that predation was observed on a number of stranded fish that were not collected by recovery efforts.

In order to correct the deficiencies noted above, Electron Hydro, LLC must provide the following information in writing:

- 1) The reasons why it failed to implement Special Terms and Conditions 6(d)(i)-(ii), 6(e)(ii)-(iii), and (vi), 6(g)(i), and 7(a)-(d);
- 2) The specific actions that Electron Hydro, LLC will take to ensure compliance with all permit Special Terms and Conditions for any authorized activities conducted during the remaining effective period of the permit (*i.e.*, through June 19, 2023); and
- 3) In accordance with Special Term and Condition 7(a)-(d), provide a written report of the incident and document the disposition of any preserved whole specimens and tissue samples recovered during the fish recovery/rescue activities.

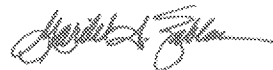
If Electron Hydro, LLC corrects these deficiencies and provides a suitable proposal for continuing operations, the Service may reconsider its proposal to suspend the permit.

This proposed permit suspension is in accordance with regulations at 50 CFR 13.27(a) & (b)(1) (available at <https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=4e0a4bd2e06bfa453b0300ff70e020b6&mc=true&n=sp50.1.13.c&r=SUBPART&ty=HTML>).

As provided in 50 CFR 13.27(b)(2), you may file a written objection to the proposed suspension of your permit. Such objection must be in writing, must be filed within 45 calendar days of the date of the notice of proposal (*i.e.*, date of this letter), must state the reasons why the permittee objects to the proposed suspension, and may include supporting documentation. A decision on the suspension shall be made within 45 days after the end of the objection period.

The Service may ultimately decide to revoke your permit in accordance with 50 CFR 13.28. A permit may be revoked for several reasons, including if the permittee fails within 60 days to correct deficiencies that were the cause of the permit suspension. If you have any questions regarding this matter, please contact Colleen Henson, Regional Recovery Permit Coordinator, via telephone at 503-231-6283, or via email at [Colleen\\_Henson@fws.gov](mailto:Colleen_Henson@fws.gov).

Sincerely,



Digitally signed by  
MARILET ZABLAN  
Date: 2020.09.09  
16:51:30 -07'00'

Marilet Zablan  
Program Manager for Restoration and  
Endangered Species Classification

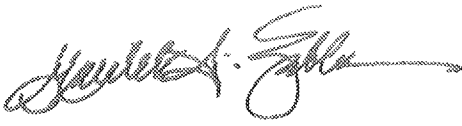
Enclosures (2)





**Issuing Office:**

Department of the Interior  
U.S. FISH & WILDLIFE SERVICE  
Endangered Species Permit Office  
911 NE 11th Avenue  
Portland, OR 97232-4181  
permitsR1ES@fws.gov

  
JUN 20 2018  
Program Manager for Restoration and Endangered Species Classification

**Permittee:**

ELECTRON HYDRO, LLC  
19318 ELECTRON ROAD EAST  
ORTING, WA 98360  
U.S.A.

**Name and Title of Principal Officer:**

THOM A. FISCHER - PROJECT MANAGER

**Authority:** Statutes and Regulations: 16 USC 1533(d); 50 CFR 17.32, 50 CFR 13.

**Location where authorized activity may be conducted:**

ON LANDS SPECIFIED WITHIN THE ATTACHED SPECIAL TERMS AND CONDITIONS

**Reporting requirements:**

ANNUAL REPORT DUE BY 01/31 FOLLOWING EACH CALENDAR YEAR THIS RECOVERY PERMIT IS IN EFFECT.  
See the attached Special Terms and Conditions for further reporting requirements.

**Authorizations and Conditions:**

- A. General conditions set out in Subpart B of 50 CFR 13, and specific conditions contained in Federal regulations cited above, are hereby made a part of this permit. All activities authorized herein must be carried out in accordance with and for the purposes described in the application submitted. Continued validity, or renewal of this permit is subject to complete and timely compliance with all applicable conditions, including the filing of all required information and reports.
- B. The validity of this permit is also conditioned upon strict observance of all applicable foreign, state, local, tribal, or other federal law.
- C. Valid for use by permittee named above.
- D. Further conditions of authorization are contained in the attached Special Terms and Conditions.



## United States Department of the Interior

FISH AND WILDLIFE SERVICE

911 NE 11<sup>th</sup> Avenue  
Portland, Oregon 97232-4181



In Reply Refer To:  
FWS/R1/AES/Recovery

JUN 20 2018

Dear Permittee:

Enclosed is your U.S. Fish and Wildlife Service recovery permit issued under section 10(a)(1)(A) of the Endangered Species Act (ESA), 16 U.S.C. 1531 *et seq.*, and its implementing regulations.

Please refer to the permit number in all correspondence and reports concerning permit activities. Engagement in any activity pursuant to this permit constitutes understanding and acceptance of the Special Terms and Conditions attached to your permit.

By accepting this permit and conducting activities authorized by it, you are agreeing to adhere to the attached Special Terms and Conditions. Failure to meet permit Special Terms and Conditions could result in ESA section 9 take violations, or suspension/revocation of this permit.

Please be aware that some species named in your recovery permit may also be listed under various State Endangered Species Acts or otherwise be of special concern to the States. As such, activities affecting those species may not be conducted without first obtaining the appropriate State permits. Possession of a Federal permit does not obviate the need for State authorization.

If you have any questions regarding this matter, please contact Colleen Henson, Regional Recovery Permits Coordinator, at 503-231-6823. Thank you.

Sincerely,

Program Manager for Restoration and  
Endangered Species Classification

Enclosures

TAKE PRIDE  
IN AMERICA 

Species [Common and (Scientific) Name]	Federal Status	Authorized Activities
Bull trout ( <i>Salvelinus confluentus</i> )	Threatened	Harass by collect/capture (hook and line, trap operation, seining, dip netting) handle, tag (with Passive Integrated Transponder (PIT) tags), biosample (including collection of scale and non-lethal tissue samples), release, and salvage in association with the recovery/rescue of fish entrained by the project.

- b. This permit does not authorize take of federally listed fish and wildlife species<sup>2</sup> that are not specifically authorized under this permit. However, the U.S. Fish and Wildlife Service (Service) acknowledges that incidental (unintentional) take<sup>3</sup> of a co-occurring listed species could potentially occur while conducting certain authorized activities. When applicable, the following Special Terms and Conditions apply to all listed fish and wildlife species that the permittee is not authorized to take under this permit, but which are unintentionally harassed, captured, injured, or killed:

- i. Each individual authorized under this permit must be knowledgeable about potentially co-occurring listed species that may occur throughout the habitats in which authorized activities are conducted and must be observant and cautious to the extent that unintentional take of a co-occurring listed species is avoided to the extent practicable.
- ii. Any listed species that the permittee is not authorized to take under this permit, but is unintentionally captured unharmed during the course of conducting authorized activities, must be released immediately at the point of capture. Activities in the project area where the species/activities are occurring must immediately cease if there is a likelihood of capturing additional individuals while continuing to conduct the activities. In the case of injury, mortality, or undue harassment of listed species for which take has not been unauthorized, the Recovery Permit Coordinator at the Service's Washington Fish and Wildlife Office (WFWO), 510 Desmond Drive SE, Suite 102, Lacey, Washington 98503 (telephone: 360-753-9440; fax: 360-753-9008) must be notified within 24 hours. The WFWO will then make a determination whether additional Special Terms and Conditions and/or restrictions must be applied in this area to address

<sup>2</sup> The ESA defines "fish or wildlife" as any member of the animal kingdom, including without limitation any mammal, fish, bird (including any migratory, non-migratory, or endangered bird for which protection is also afforded by treaty or other international agreement), amphibian, reptile, mollusk, crustacean, arthropod or other invertebrate, and includes any part, product, egg, or offspring thereof, or the dead body or parts thereof.

<sup>3</sup> Incidental take is defined by the ESA as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." For recovery permits this type of take is referred to as unintentional take (*i.e.*, not considered the actual intent of the activities authorized under a permit).

## SPECIAL TERMS AND CONDITIONS

1. This Endangered Species Act (ESA) recovery permit is issued under the authority of section 10(a)(1)(A) of the ESA and its implementing regulations at 50 Code of Federal Regulations (CFR) 17. This recovery permit was previously issued on August 20, 2015. All Special Terms and Conditions set forth in that permit are hereby superseded by this permit renewal and amendment.

This permit authorizes the disturbance, capture, and handling of bull trout during fish recovery/salvage activities associated with the scheduled and unscheduled draining of the forebay reservoir, as well as during trap and haul and/or hook and line collection within the forebay during regular operations. However, this permit does not authorize take of bull trout that may occur from the operation of the Electron Hydroelectric Power Project. The activities currently authorized under this recovery permit, as well as activities associated with the operation of the Electron Hydroelectric Power Project, are anticipated to be included as part of the Habitat Conservation Plan (HCP) under development by Electron Hydro, LCC. If the HCP addressing the Electron Hydroelectric Power Project's effects on bull trout is completed and the Service issues an Incidental Take Permit for that HCP, that Incidental Take Permit would supersede this recovery permit and this recovery permit would be terminated.

2. Take Authorization:
  - a. The permittee is authorized to purposefully take<sup>1</sup> the following federally listed fish species in conjunction with the following authorized activities for scientific purposes or to enhance the recovery, survival, and propagation of the species as specified in the permittee's April 10, 2018, recovery permit renewal and amendment application, in accordance with the Special Terms and Conditions stated herein.

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<sup>1</sup> Take, as defined by the Endangered Species Act (ESA), for fish and wildlife means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Issuance of a recovery permit is a Federal action subject to the requirements of section 7 of the ESA. Under these requirements, a formal consultation is conducted to determine if the recovery permit action avoids jeopardy and adverse modification of critical habitat. The outcome of the formal consultation is the issuance of a biological opinion. If a recovery permit action is compliant with section 7 and incidental (unintentional) take is anticipated, that take can be exempted through an incidental take statement accompanying the biological opinion. The basis for the exemption is then incorporated into the Special Terms and Conditions of the recovery permit.

identify special conditions or circumstances under which listed individuals can conduct authorized activities. Each named individual must be responsible for compliance with the Special Terms and Conditions in this permit. The List, printed on Service letterhead, must be retained with these Special Terms and Conditions.

To request changes to the List, the permittee must submit a written or email request to the Recovery Permit Coordinator at the WFWO. The request must be submitted at least 30 calendar days prior to the requested effective date. The request must include the following information:

- a. The name of each individual to be appended to the List;
- b. Current position title and employer's name for each individual;
- c. The resume/qualifications statement of each individual, detailing their education, training, and experience with authorized species and authorized activities in this permit, or similar species and activities, and type of activity for which authorization is being requested;
- d. Concurrently, ensure other permitting entities (e.g., Bird Banding Laboratory, Migratory Birds, State fish and wildlife agencies, etc.) have been notified for all associated name changes on issued permits, as appropriate;
- e. The names, titles, organizations, email addresses, and phone numbers of a minimum of two references for each individual; and
- f. The names of any individuals to be deleted from the List.
- g. The permittee must replace and attach the current updated version of the List to this recovery permit once it is received from the WFWO. This permit will be considered invalid without a current attached List.

Note: This procedure is for personnel changes to the List only. For requests to renew and/or amend this permit, a complete application and appropriate processing fee (if not fee exempt) must be submitted to the Program Manager for Restoration and Endangered Species Classification at the Service's Pacific Regional Office (PRO), Ecological Services, 911 NE 11th Avenue, Portland, Oregon 97232-4181 (telephone: 503-231-6131; fax: 503-231-6243). An application may be obtained at <https://www.fws.gov/forms/3-200-55.pdf>.

5. General Permit Responsibilities:

- a. Acceptance of this permit serves as evidence that the permittee understands and agrees to abide by the following regulations: 50 CFR Part 13 (general permit procedures) and 50 CFR 17.32 (threatened wildlife), as applicable and available at <https://www.ecfr.gov/cgi-bin/ECFR?page=browse>. In addition, the permittee

avoidance of take impacts to listed species for which take has not been authorized. The WFWO will inform the permittee in writing of the determination within 15 calendar days of the initial notification. The continuation of authorized activities in the project area where the species/activities occurred must not be reinitiated until authorized by the WFWO.

- iii. Any unintentional take of listed species not authorized under this permit must be documented in the annual report.
- c. This permit does not authorize the removal/possession and/or damage/destruction of federally listed plant species<sup>4</sup> and/or their parts on lands under Federal jurisdiction that are not specifically authorized under this permit. If unauthorized listed plant species are affected by one or more of these actions on Federal lands, the permittee must immediately cease authorized activities in the project area where the species/activities are occurring and notify the Recovery Permit Coordinator at the WFWO. The WFWO will then make a determination whether additional Special Terms and Conditions, restrictions, and/or other requirements must be applied in this area to avoid the unauthorized removal/possession and/or damage/destruction of federally listed plant species not authorized under this permit. The WFWO will inform the permittee in writing of the determination within 15 calendar days of the initial notification. Actions associated with listed plant species not authorized under this permit must be documented in the annual report.

3. Geographic Areas:

Authorized activities are restricted to the following geographic areas in Washington:

- a. The wooden flume from the Puyallup River Electron Hydroelectric Project diversion dam (River Mile (RM) 41.7) to the storage reservoir/forebay (approximate RM 31.2); and downstream release sites (at RM 26.5 and RM 31) and the upstream release site (at RM 42) on the Puyallup River, in Pierce County.

If needed to access project sites, the permittee must obtain access authorization(s) from the landowner or manager before entering Federal, Tribal, State, public, or private lands to conduct authorized activities.

4. Authorized Individuals:

Only individuals on the attached List of Authorized Individuals (List) are authorized to independently conduct activities under this permit. The List may limit activities or

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<sup>4</sup> The ESA defines "plant" as any member of the plant kingdom, including seeds, roots, and other parts thereof. The removal/possession and/or damage/destruction of listed plant species include not only the whole plant, but also parts of the plant as previously defined.

American habitation sites; (3) concentrations of fire-altered rock and/or burned or charred organic materials; and (4) historical structure remains such as stone-lined building foundations, wells, or privy pits. Upon discovery, the permittee must immediately contact the Recovery Permit Coordinator at the WFWO (telephone: 360-753-9440) for further guidance before reinitiating activities. The removal or further disturbance of discovered archaeological materials and properties is not allowed at the project location until the Service provides instructions and/or guidance.

- i. At the discretion of the Service, a Service employee may inspect the facilities or accompany the permittee during any activity conducted pursuant to this permit. The permittee must allow Service personnel complete and immediate access to any materials and information generated as a result of this permit. Any refusal, obstruction, or hindrance of Service participation in such work shall be grounds for suspension or revocation of this permit in accordance with 50 CFR 13.27 or 50 CFR 13.28, respectively.
- j. If the permittee wants to continue work with listed species after the expiration date of this permit, a request for permit renewal (using Application Form 3-200-55) must be submitted to and received at the PRO at least 30 calendar days prior to the permit expiration date. Meeting this requirement allows the permittee to continue currently authorized activities until the renewal application is acted upon. If this requirement is not met, this permit becomes invalid on the permit expiration date.
- k. Any new activities, changes in activities, or work in new geographic areas with the same or other listed species will require this permit to be amended. The permittee is not authorized to conduct any of these changes or additions until they have requested (using Application Form 3-200-55) and have received an amended permit.
- l. A permit renewal or amendment application will be processed only after all reporting requirements have been met for the current and previous calendar years. If no activities have been conducted during the term of this permit, the Service may suspend this recovery permit due to a lack of recovery benefit to the species.

6. Purposeful Take of Bull Trout:

The permittee is authorized to carry out the following activities within the geographic boundaries specified above, and the time limitation specified in the permit, in accordance with the Special Terms and Conditions stated below.

must have all other applicable Federal, Tribal, State, and/or local government permits prior to the commencement of activities authorized in this permit.

- b. Notifications to conduct activities associated with scheduled project outages at authorized geographic areas (locations) pursuant to this permit must be submitted in writing to the Recovery Permit Coordinator at the WFWO at least 10 calendar days prior to conducting such activities. Notification of unscheduled outages and accompanying permitted fish recovery activities must be made as soon as possible, but no later than 24 hours, from the time the outage begins.
- c. Only individuals on the List are approved to conduct activities under this permit. The permittee is responsible for ensuring that all authorized individuals comply with the Special Terms and Conditions in this permit.
- d. The permittee and all authorized individuals must have in their possession an electronic or hard copy of this permit, including attachments, while conducting authorized activities.
- e. The Service requires all handling of listed species be done in an expedient manner to minimize the risk of injury and mortality. Unless otherwise specified in this permit, captured individuals must be released at their capture site as soon as authorized activities are completed.
- f. To prevent the spread of invasive and nonnative species, all equipment, clothing, and boots must be cleaned to remove mud, debris, and vegetative material before arriving at a project area. Invasive species are organisms (includes nonnative pathogens and other microorganisms) that are nonnative to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or impact human health. Nonnative species are species that have been introduced into new areas that were not historically part of their native range. If any previously unrecorded invasive species are observed in a project area, the Service requests that the permittee contact the WFWO to report their findings as soon as it is convenient and include the information in the respective annual report.
- g. Listed species and/or parts of listed species taken under this permit are not considered the property of the permittee but remain the property of the Federal Government. Additionally, they must not be sold, donated, or transferred without written authorization from the Service, unless otherwise authorized in this permit.
- h. Ground-disturbing activities must be immediately stopped when human remains or potentially significant archaeological materials are discovered at a project location. Examples include, but are not limited to: (1) concentrations of historic artifacts (e.g., bottles, ceramics) or prehistoric artifacts (chipped stone, obsidian, or glass arrow points and other tools, wood fish weirs or lattice panels); (2) culturally altered ash-stained midden soils associated with pre-contact Native

high debris loading results in a higher probability of injury or death to fish being held in the trap or live box.

- d. Fish Recovery/Rescue Activities (During Scheduled and Unscheduled Project Outages):
  - i. Prior to initiating fish recovery/salvage activities, the daily high air temperature must be forecast to be 24 degrees Celsius (75 degrees Fahrenheit) or less in the Electron, Washington area for 2 consecutive days encompassing the work period. Additionally, the forecast must be reconfirmed the day before initiation of the work to ensure the air temperature is not expected to exceed 24 degrees Celsius (75 degrees Fahrenheit).
  - ii. Appropriate numbers of transport vehicles/tankers and trained personnel must be available and onsite to handle a worst-case scenario if the anticipated number of trapped fish exceeds what was anticipated.
  - iii. To minimize stress to any captured bull trout, the "bag" or "purse" portion of the seine must not be completely removed from the water if seining is conducted.
- e. Handling/Biosampling Activities:
  - i. Workers' hands must be free of sunscreen, lotion, or insect repellent prior to conducting activities that may involve handling bull trout.
  - ii. A healthy environment must be provided for bull trout held in a tank (clean, cool water with ample dissolved oxygen), and the holding time must be minimized. Water-to-water transfers, the use of shaded or dark containers, and supplemental oxygen must all be considered in designing fish handling operations. The temperature must be maintained at, or nearly at, the temperature of the water from which the fish was taken. If ice is to be used to maintain the temperature, it should be in the form of sealed ice packs.
  - iii. Because bull trout are aggressive predators and are known to be cannibalistic, the permittee must partition held fish individually or by size class and should avoid holding numerous bull trout in the same live-well.
  - iv. If captured bull trout are anesthetized, then the period of time an individual is anesthetized must be kept as short as possible. The number of bull trout that are anesthetized at one time must be no more than what can be processed (biosampled and tagged) within 5 minutes. The pH of any anesthetic must be monitored and/or buffered to match that of the ambient water.

a. General Activities:

- i. Only qualified and experienced individuals, as determined by the WFWO, may perform the authorized activities described below (refer to the attached List).
- ii. The authorized activities must be conducted in accordance with the study plans (as modified by the Special Terms and Conditions) accompanying the permit application and/or subsequent amendment requests.
- iii. All nets and sampling gear must be cleaned and disinfected before use, and before sampling in a different watershed.
- iv. All capture, retention, and handling methods must be implemented at times that will avoid temperature stress to fish being sampled. At locations that have the potential to contain bull trout, sampling must not be done if the water temperature exceeds 18 degrees Celsius (64 degrees Fahrenheit). The Service recommends sampling be done at water temperatures less than 15 degrees Celsius (59 degrees Fahrenheit), where possible. It may be necessary to conduct activities in the morning or evening on hot summer days to avoid temperature stress to captured fish.
- v. A colored fish key with all char, trout, and salmon species known to occur, or that may possibly occur, in the system must be on hand when identifying fish. If identification of the fish is difficult and it may be a bull trout, a photograph must be taken for verification.
- vi. All netting used for capturing, handling, and holding of fish, including the incidental capture of bull trout, must be composed of a fine mesh, knot-free material that will minimize injury to the fish.

b. Hook and Line Activities (Fish Recovery in Forebay):

- i. Artificial lures with a single, barbless, non-stainless steel hook may be used for hook and line capture. The use of live or dead bait is prohibited.
- ii. Bull trout caught using the hook and line method must be released using a "de-hooker." If removing the hook is deemed likely to cause injury or death to the fish, the line must be cut and the hook left in the fish. Details describing the use of a de-hooker are available at:  
<http://wdfw.wa.gov/fishing/salmon/selective/>.

c. Trapping Activities (Trap and Haul Operation in Forebay):

- i. Active traps must be monitored at least once daily. Traps must be checked more frequently when crowding produced by an increasing catch rate or

f. Tagging/Marking Activities:

- i. Tags that will be surgically implanted (PIT tags) must be sterilized by immersing in isopropyl alcohol for at least 2 minutes. Surgical equipment must be sanitized with a betadine solution (or appropriate substitute) between each surgical implantation of tags. If PIT tag injectors are used, the needles and pushrods must be disinfected between injections in isopropyl alcohol for a minimum of 10 minutes.
- ii. All PIT tagging activities must cease when stream water temperature exceeds 18 degrees Celsius (64 degrees Fahrenheit).
- iii. Before inserting a PIT tag into a captured bull trout, the fish must be scanned for the presence of an existing functional PIT tag. If an existing PIT tag is detected in the fish, the fish must not be tagged with an additional PIT tag.
- iv. Any captured bull trout showing signs of injury or considerable stress prior to tagging must not be tagged with a PIT tag. The fish must be placed in a holding tank and released upon showing signs of adequate recovery.
- v. Individual bull trout that are PIT tagged may be held up to 12 hours in submerged holding pens or recovery boxes to ensure they are fully recovered and have retained their tag. Holding pens and recovery boxes must be partitioned, as needed, to avoid intra-species predation based on the following fork length measurements: fish less than 100 millimeters (mm) (3.9 inches (in)); fish greater than 100 mm (3.9 in), but less than 200 mm (7.9 in); fish greater than 200 mm (7.9 in), but less than 300 mm (11.8 in); and fish greater than 300 mm (11.8 in).
- vi. If an individual bull trout has lost its PIT tag before being released from a holding pen or recovery box, the permittee may re-insert another PIT tag if the additional handling and tagging process will not compromise its recovery, health, and survival.
- vii. To maximize the utility of the tags to the extent possible, the permittee must use tagging technology compatible with that used by other researchers in the vicinity, and must coordinate the data collected with the other researchers. Tag numbers or identification must be provided in annual reports.

- A. It is advisable to monitor the effect of anesthesia on a few fish to determine how anesthesia will affect individual fish under local ambient conditions (water temperature, water pH, etc.). Use the lowest dose/level needed to achieve the level of anesthesia required to complete an activity.
  - B. The anesthetic MS-222 may not be used on fish that may be subject to sport harvest fisheries within 21 days of exposure.
  - C. Clove oil may not be used.
  - D. The anesthetic AQUI-S@20E may be used as an alternative to MS-222. To use AQUI-S@20E as an immediate release sedative in freshwater fish for field-based activities, the permit holder must sign up to participate in the Service's Aquatic Animal Drug Approval Partnership Program (AADAP) Investigational New Animal Drug (INAD) exemption program (USFWS-AADAP INAD 11-741) and must comply with the requirements as set forth in the INAD Study Protocol for AQUI-S@20E (for more information go to <https://www.fws.gov/fisheries/aadap/inads/AQUI-S20E-INAD-11-741.html>).
  - E. Carbon dioxide may be used as a fish anesthetic as per FDA rules and requires no withdrawal time.
  - F. Electro-anesthesia may be used as a fish anesthetic as an alternative to chemicals, and requires no withdrawal time.
- v. The permittee may collect fish statistics (length, weight, sex, scale samples, marks, condition/health, angling injury, etc.) from captured bull trout. Handling and measurement of captured fish must follow commonly accepted techniques for salmonid field sampling. Equipment used to gather statistics and samples must be washed and sanitized in a betadine or other antiseptic solution prior to handling each fish. A poly-aqua (manufactured fish slime) or a stress coat should be used during handling.
- vi. A non-lethal fin clip (not to exceed 0.75 square centimeter) must be taken from any native char encountered and must be preserved in a vial of 95 percent ethanol for genetic analysis. Any tissue samples collected must be transferred to the WFWO. A photograph of any sampled individuals must also be taken, when feasible.

permittee must document the date, time, location (latitude and longitude coordinates), name of person, permit number salvaged under, and the circumstances that led to the discovery of the specimen. This information must be provided in the annual report.

- iii. Collected/captured malformed, abnormal, or dead individuals, as authorized by the WFWO, may be sent to a WFWO-approved repository for diagnostic examinations to determine the reason(s) for their health/physical status and/or death. Refer to the Designated Repository section for instructions on the submission of biological samples and specimens for diagnostic examinations.
- iv. Individuals found with serious injuries that will likely compromise their survival or subject them to undue pain and suffering may be humanely euthanized. Euthanasia must follow American Veterinary Medical Association Guidelines available at <https://www.avma.org/KB/Policies/Documents/euthanasia.pdf>. When feasible, the permittee must contact the Recovery Permit Coordinator at the WFWO (by telephone, fax, or email) for authorization prior to euthanizing the specimen. Otherwise, the WFWO must be notified within 24 hours of all salvaged bull trout that are euthanized. The specimen must be submitted to a WFWO-approved repository.
- v. Individuals that are euthanized may be used for additional research activities by the permittee if approved by the WFWO before their use.
- vi. The Service recommends that all salvaged specimens that have research or educational value be preserved in accordance with standard museum practices while still providing maximum scientific information. Before expiration of this permit, all salvaged specimens must be properly labeled and deposited at a WFWO-approved repository. The permittee must provide the repository with a copy of this permit.
- vii. The Service recommends the permittee inform the appropriate Federal, Tribal, State, public, or private landowner or manager if salvaged specimens are recovered on their respective lands.

7. Unintentional Take Limitations:

The number of bull trout allowed to be unintentionally injured or killed during authorized activities is, per calendar year, is listed in the table below.

g. Release Activities:

- i. Regardless of holding time, any captured bull trout that shows signs of stress or injury must be held until it is able to maintain itself. It may be necessary to nurture the fish in a holding tank until it has recovered.
- ii. Any bull trout captured must be released as soon as possible into the Puyallup River at one of the three sites identified in the permittee's application that are listed below, depending on the life stage and date captured:

A. Juveniles and subadults:

Site 1 (~RM 26.5) or Site 2 (~RM 31) located downstream of the forebay.

B. Adults:

Site 1 (~RM 26.5) or Site 2 (~RM 31) located downstream of the forebay between December 1 and April 30.

Site 3 (~RM 42) located upstream of Electron Dam between May 1 and November 30\*.

\*Note: any adults recaptured within a 2-week period of their initial capture/release within these dates must be re-released at either of the two downstream release sites (Site 1 (~RM 26.5) or Site 2 (~RM 31)).

h. Salvage Activities:

- i. The permittee may salvage bull trout found injured or dead during the term of this permit, except as noted in Special Term and Condition 6(h)(ii). In the event an individual is salvaged, the permittee must follow the notification process and procedures, as applicable, as described under the Unintentional Take Limitations section.
- ii. The permittee is not authorized to salvage any injured or dead bull trout that are encountered and appear to have been injured or killed as the result of potential criminal activity. Under these circumstances, the permittee must immediately contact and report their findings to the Resident Agent in Charge at the Service's Office of Law Enforcement (OLE) (telephone: 425-883-8122). In conjunction with the care of sick or injured bull trout or preservation of biological materials from a bull trout, the permittee has the responsibility to carry out instructions provided by the Service's OLE to ensure that evidence intrinsic to the specimen is not disturbed. The

8. Designated Repository:

Contact the WFWO for instructions on how to prepare and where to submit specimens.

9. All reports, publications, photographs, video footage, or other documents that include information gathered under the authority of this permit must reference this recovery permit by permit number. Copies of such documents must be provided to the WFWO immediately upon their completion. Draft documents, raw/field data and notes, and other information resulting from work conducted under the authority of this permit must be submitted to the Service upon request.

10. Reporting Requirements:

- a. An annual report of activities conducted under this permit must be submitted to the Recovery Permit Coordinators at the PRO and the WFWO by January 31 following each calendar year this permit is in effect. In order to track, document, and assess all project-specific activities conducted pursuant to this permit, we are requiring the annual report to summarize all of the activities conducted pursuant to this permit during the previous calendar year. Activities that are continuous (*i.e.*, overlapping in 2 or more calendar years), must be reported each year the activity is in effect. The annual report must be in the following format:
  - i. An introduction section addressing reasons and objectives for taking the bull trout;
  - ii. A methods section addressing data collection methods/techniques, data analysis process, personnel working on the project, and effectiveness of the Special Terms and Conditions in minimizing take of bull trout;
  - iii. A results section that summarizes the data collected for bull trout, including information on any other federally listed species encountered while conducting activities authorized under this permit; and
  - iv. A conclusion section that specifically provides, at a minimum, application of the results to recommendations for the recovery of bull trout.
- b. The annual report must include, but need not be limited to, the following information. The status of ongoing projects and studies under the permit must be briefly summarized as requested below. A comprehensive report(s) on completed projects and studies must be submitted with the respective annual report or any time during the calendar year at the time of completion.
  - i. Summary presentation and brief discussion of significant research results and their importance with regards to recovery of the bull trout;

Species	Study or Activity	Amount of Unintentional Take	Comments
Bull trout	Capture and handling during trapping and hook and line activities in forebay.	2	Includes no more than 1 adult ( $\geq 305$ mm in length).
	Recovery/rescue activities in forebay and flume during outages.	2	Includes no more than 1 adult ( $\geq 305$ mm in length).
	Salvage.	unlimited	

In the event that the number of individuals or life stages individually or combined allowed to be unintentionally injured or killed is exceeded, during performance of authorized activities, the permittee must:

- a. Immediately cease the activity resulting in injury or death. Continuation of the activity is dependent on reauthorization by the PRO. After analysis of the circumstances of the injury or mortality, the PRO may amend, suspend, or revoke this permit.
- b. Within 24 hours, notify the Recovery Permit Coordinator at the PRO (telephone: 503-231-6131; fax: 503-231-6243) and the WFWO (telephone: 360-753-9440; fax: 360-753-9008) (see attached contact list). Such notification must be followed up in writing to the PRO and the WFWO within 3 working days. The permittee must provide a written report of the circumstances that led to the injury or mortality; date, time, and precise location of the injured animal or carcass; disposition of the injured animal or suggested disposition of the dead specimen; and a description of the changes in activity protocols that will be implemented to reduce the likelihood of such injury or mortality from reoccurring, if appropriate. The incident must also be discussed in the annual report submitted in the respective calendar year.
- c. Unless otherwise authorized, all unintentionally killed specimens must be preserved in accordance with standard museum practices while still providing maximum scientific information. Before expiration of this permit, all preserved specimens must be properly labeled and deposited at a WFWO-approved repository. The permittee must provide the repository with a copy of this permit.
- d. Any specimen killed must be kept whole and put on ice or frozen. Prior to freezing, a small sample of tissue (e.g., a fin clip approximately 1 square centimeter) must be preserved in a vial of 95 percent ethanol for genetic analysis. Frozen specimens must be wrapped directly in aluminum foil to preserve the specimen in a manner that allows for future contaminant analysis.

- xiv. Planned future activities if authorized under this permit.
  - c. Copies of any other Federal, Tribal, State, and/or local government permits required to perform authorized activities must be submitted with the annual report.
  - d. Submission of annual reports:
    - i. One copy of an annual report (electronic format preferred) is required to be submitted to the Recovery Permit Coordinators at the PRO and the WFWO each calendar year. Annual reports may be submitted electronically to the following email addresses:  
  
PRO: [permitsRIES@fws.gov](mailto:permitsRIES@fws.gov)  
WFWO: [permitsWFWO@fws.gov](mailto:permitsWFWO@fws.gov)  
  
Add the following subject line to the email: Annual report for recovery permit TE-72492B-1.
    - ii. All email file attachments combined are limited to 25 megabytes in size. If electronic files exceed this size limitation, please: (1) send them in separate emails with appropriately sized attachments, (2) copy them onto a DVD or CD, or (3) send them as a printed document(s).
    - iii. Preferred formats for annual report documents are Microsoft Word, Excel, or Access; Adobe PDF; graphic files - GIF, JPG, BMP, or TIFF; and ArcGIS spatial files - shapefiles or geo-databases. If different file formats are to be submitted, contact the WFWO before submission to verify if they will be readable by the Service.
  - e. If no authorized activities occurred over the course of a calendar year, indication of such by email to the above addresses must be submitted as a report.
11. Failure to comply with reporting requirements may result in non-renewal, non-amendment, or suspension/revocation of this permit

JUN 20 2018  
Date

  
Program Manager for Restoration and  
Endangered Species Classification

- ii. Maps and/or descriptions of locations (including GPS/GIS data, as appropriate) where authorized activities occurred;
- iii. The results of all survey or sampling efforts, including estimates of population size of any federally listed species, if possible;
- iv. Number of bull trout that were salvaged under the recovery permit, including capture locations and their disposition;
- v. Results of any genetic studies from biological samples collected under this recovery permit;
- vi. Quantified take of bull trout, by life stage, including numbers of individuals unintentionally killed (including dates, locations, and circumstances of lethal take), and an estimate of the numbers of individuals otherwise harmed or harassed;
- vii. Quantified take of other listed fish and wildlife species not authorized under this permit, including numbers of individuals unintentionally killed (including dates, locations, and circumstances of lethal take), and an estimate of the numbers of individuals otherwise harmed or harassed;
- viii. Quantification of the removal/possession and/or damage/destruction of listed plant species and/or their parts on lands under Federal jurisdiction not authorized under this permit. Include dates, locations, an estimate of the numbers of individual plants affected, and the circumstances that led to these actions;
- ix. Discovery information and documentation for any potential criminal activity that was reported to the OLE;
- x. Repositories where bull trout specimens were sent, including salvaged specimens that were found malformed, abnormal, injured, sick, or dead, and any issued diagnostic or examination reports from a repository;
- xi. Other pertinent observations made during authorized activities regarding the status, biology, or ecology of the bull trout;
- xii. Reports or other documents that include information on human remains or significant archaeological materials if they were discovered at a project location;
- xiii. Reports or other documents that include information gathered under the authority of this permit, including the presence of any previously undocumented invasive species observed in a project area; and



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
911 NE 11<sup>th</sup> Avenue  
Portland, Oregon 97232-4181

In Reply, Refer to:  
FWS/R1/AES/Recovery/TE-72492B-1

## LIST OF AUTHORIZED INDIVIDUALS Recovery Permit: TE-72492B-1 Electron Hydro, LLC

1. Individuals authorized to independently conduct all authorized activities under this permit:  
  
Donivan Campbell (Fisheries Biologist).
2. Supervised individuals (*i.e.*, individuals not authorized above) may conduct activities pursuant to this permit only under the direct, on-site supervision of the authorized individual listed above. "On-site supervision" is defined as having the authorized individual at a distance close enough to enable the authorized individual to immediately assist a supervised individual, as needed, while the supervised individual is conducting an authorized activity. The U.S. Fish and Wildlife Service recommends that each supervised individual receive instructions and/or training before attempting to conduct an authorized activity.
3. To request personnel changes to this List, refer to the Authorized Individuals section in the associated recovery permit.

JUN 20 2018

Date

  
Program Manager for Restoration and  
Endangered Species Classification

This List is valid only if it is dated on or after the permit issuance date. The associated recovery permit will be considered invalid without this List attached.

List of Service Contacts:

U.S. Fish and Wildlife Service  
Pacific Regional Office (PRO)  
Ecological Services, Recovery Permits  
911 NE 11th Avenue  
Portland, Oregon 97232-4181  
Email: [permitsRIES@fws.gov](mailto:permitsRIES@fws.gov)  
Telephone: 503-231-6131  
Fax: 503-231-6243

U.S. Fish and Wildlife Service  
Washington Fish and Wildlife Office (WFWO)  
510 Desmond Drive SE, Suite 102  
Lacey, Washington 98503  
Email: [permitsWFWO@fws.gov](mailto:permitsWFWO@fws.gov)  
Telephone: 360-753-9440  
Fax: 360-753-9008

U.S. Fish and Wildlife Service  
Office of Law Enforcement (OLE)  
Resident Agent in Charge  
Redmond, Washington (responsible for Idaho and Washington)  
Telephone: 425-883-8122

Annual Report Submission Information:

Annual reports, due by January 31, must be submitted electronically and/or mailed to the following Service offices:

Pacific Regional Office: [permitsRIES@fws.gov](mailto:permitsRIES@fws.gov)  
Washington Fish and Wildlife Office: [permitsWFWO@fws.gov](mailto:permitsWFWO@fws.gov)

Species-Specific Internet Links:

1. Washington Department of Fish and Wildlife, Releasing Salmon Carefully (using the de-hooker) – information available at: <http://wdfw.wa.gov/fishing/salmon/selective>.
2. U.S. Fish and Wildlife Service, Aquatic Animal Drug Approval Partnership Program (AADAP) Investigational New Animal Drug (INAD) exemption program available at: <https://www.fws.gov/fisheries/aadap/inads/AQUL-S20E-INAD-11-741.html>.

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Electron Hydro's Fish Biologist to arrive at the Forebay at 0800 to assist with fish sampling and enumeration while crews seined pools that were forming and stranding fish in the mud as flows in the Forebay was decreased.

Puyallup Tribal Fisheries (PTF) advised EH of the need to hire qualified professionals to assist with the fish rescue along with a list of equipment needed to make this a successful fish rescue as they are the only entity that has been present for previous events at the Forebay. None of the recommendations provided by PTF staff were followed by EH.

Upon arrival the Forebay was about 2/3 of the full pool and receding quickly. Ambient air temp was 68°F (20°C). The crews assembled by EH were unprepared to contend with the number of pools forming and hazards associated with the thick deep mud, and the participants did not have fish handling training or experience. Thus, Tom Fischer (owner of EH) arrived onsite to evaluate the situation and instructed the operator at the headworks to revert to 50% flow reduction to slow the dewatering process as to allow crews to keep up with the increasing number of pools that were forming.

There were 2 tanks available to transport fish downstream, temperature in both tanks at 0830 were 63°F (17°C) and no oxygen (O<sub>2</sub>) had been turned on on either tank. I was notified by the EH Fish Biologist that one load of juvenile fish was already transported downstream prior to my arrival with unknown number of fish onboard and the second load was on its way downstream. Given that the O<sub>2</sub> hadn't been turned on when I arrived, I assume that the fish transported prior to my arrival had no O<sub>2</sub> supplied to them. I, along with the PTF Fish Biologist, notified the EH Fish Biologist of the issue and when the tank was turned on there appeared to be a hole in the pipe thus the pipe needed repaired. It took almost an hour to fully fix the pipe and obtain a second bottle of O<sub>2</sub>. Fish were held in the tank during this period while the water temperature increased to 66°F (19°C) which is in the upper limit of thermal tolerance for salmonids. One-gallon jugs of ice were added to the tank but with limited number available it did not reduce the temps in the tank.

After the repairs were made and O<sub>2</sub> was successfully flowing, the fish were immediately transported downstream. This left us with no tank to put any fish recovered in as the second truck hadn't returned. Fish were put into recovery buckets with portable fish tank circulators and ice jugs were added to the buckets. Ambient air temps at 0930 were 72°F (22°C) and heating up fast. The second tank finally showed up at 0945 and a temp check in the tank was taken, 59°F (15°C). Once again, no O<sub>2</sub> was flowing in the tank and the driver indicated that it did not work on this truck. The PTF Fish Biologist jumped up on the truck and turned the O<sub>2</sub> valve on as the

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WASHINGTON DEPARTMENT OF FISH AND WILDLIFE  
FISH PROGRAM

**Fish Kill Report**

<b>Prepared By:</b>	Tara Livingood-Schott Region 6 Area Fish Biologist, Olympia, Thurston County
<b>Date prepared:</b>	August 6, 2020
<b>Responsible party:</b>	Electron Hydro LLC Thom Fischer 29711 Kapowsin-Electron Reservoir Rd Orting, WA 98360
<b>Landowner:</b>	Electron Hydro LLC Thom Fischer 29711 Kapowsin-Electron Reservoir Rd Orting, WA 98360
<b>Nature of event:</b>	Fish Kill
<b>Water body:</b>	Puyallup River (WRIA 10)
<b>Date of Event:</b>	July 29, 2020
<b>Reporting Party:</b>	WDFW Area Fish Biologist
<b>Location of violation:</b>	Electron Hydro Forebay Facility 46.985108, -122.174684
<b>Directions from nearest town:</b>	From Graham – Head east on 224 <sup>th</sup> St E for two miles. Turn right onto Orting Kapowsin Hwy E and drive for 4.8 miles. Turn left onto Orville Rd E and drive for 2 miles. Turn right onto Camp 1 Road E. Continue driving until you reach the Electron Hydro gate, once through the gate follow signs to the Forebay.
<b>Description of Event:</b>	Large fish kill while dewatering the forebay for construction purposes resulting in loss of ESA listed species including Chinook, Winter Steelhead, and Bull Trout, along with Coho, Rainbow Trout, Cutthroat Trout, and Sculpin.
<b>Chronology of Events:</b>	On Wednesday, July 29, 2020, Tara Livingood-Schott, Area Fish Biologist with WDFW was onsite for the dewatering of the Electron Hydro (EH) Forebay for routine maintenance. I was instructed by

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EH crews also noted that they saw several hundred small fishes within the dewatered flume upstream of the forebay but were unable to recover them. Only 28 O'mykiss fry were recovered from the flume along with 7 sculpin.

The total number of fish lost during this activity is unknown, but my best educated guess would be in the thousands as we were only able to recover a small portion of the total. Given the large areas that were never fished out, the number recovered was minimal at best. See attached images for recovered fish that were sampled by PTF Fish Biologists - Electron Forebay Fish Kill 07292020.pdf.

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**Resource Description:** ESA listed species of Fall Chinook, Winter Steelhead and Bull Trout in all life stages.

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**Damage Assessment:** Unauthorized lethal take of ESA listed Fall Chinook, Winter Steelhead and Bull Trout in all life stages. Only a fraction of the overall number of fish were handled and sampled by WDFW and PTF fish biologists, thus the overall take could be in the thousands.

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**Mitigation Recommendations:**

- Fully screen bypass channel which feeds the forebay to ensure no ESA listed species are entrained.
- Hire a qualified consultant for all future fish rescue operations.
- Ensure proper permits and notifications are made to proper agencies prior to start of work.

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**Attachments:** Electron Forebay Fish Kill 07292020.pdf

- Images of fish that were recovered and sampled by PTF Fish Biologist

Electron Forebay dewatering.pdf

- Images of the pools created during dewatering process, most of which were not fished out, along with the penstock horseshoe where all the adults were recovered.

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EH Fish Biologist said that all the tanks were in working order yesterday. Sure enough O<sub>2</sub> started flowing and fish were transferred from the buckets into the tank. This indicates that fish transferred prior to this were transferred without O<sub>2</sub>. We were told that all water tanks were filled from a cistern since the temps were lower and may help in fish recovery. Water taken from any cistern is O<sub>2</sub> poor to begin with so not having O<sub>2</sub> operational may have significantly impacted survival of fish hauled prior to this point.

At approx. 1000 two crew members from EH were trapped in the mud up to their waist and the situation was becoming increasingly urgent to free the two as they were sinking slowly by the min. It took around 45 min. to free the individuals from the mud and during this time no fish recoveries took place as flows continued to drop stranding more and more fish. At this point in time a family of Canada geese and 2 bald eagles were feasting on the stranded fish.

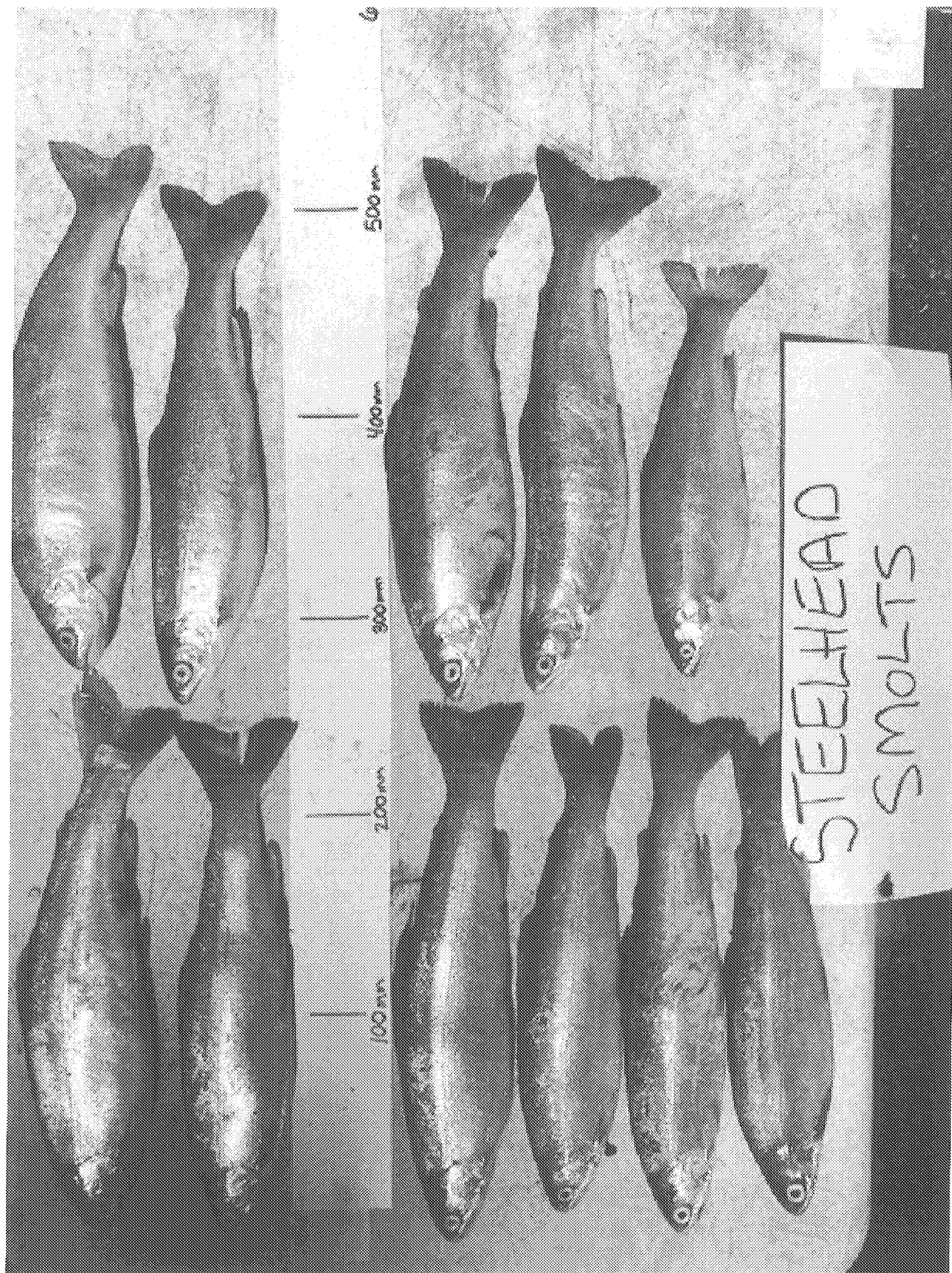
When PTF Management arrived on site at 1035 he noted that several large Bull Trout were seen in the area of the pen stocks stranded in the mud as they suffocated. He contacted Chris Spens (EH) who was onsite and asked him about the lack of equipment he requested to have onsite such as a crane and boat for lifting the fish out of the water to the rescue site. It took over an hour to get the crane onsite while fish in the area of the pen stocks were slowly suffocating from the high sediment load in the water. Smaller individuals were likely sucked through the trash rack into a large pipe, approx. 18-24" diameter, just below the waterline (See attached image #7 – Electron Forebay dewatering.pdf).

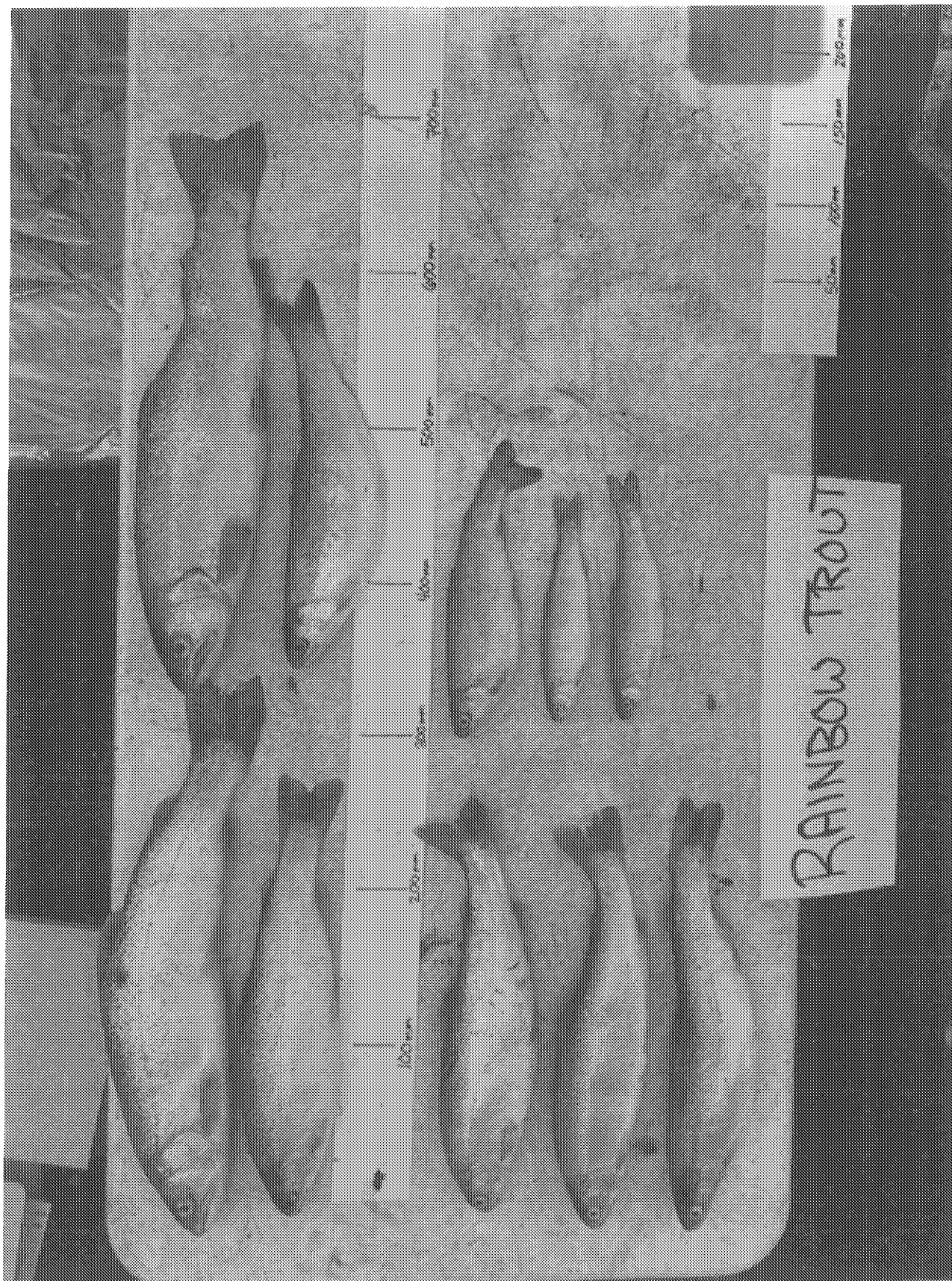
Once the crane was onsite and crews were able to get into what was now being called the horseshoe (area of attraction to the trash rack), adult steelhead and Bull Trout were loaded into garbage cans and lifted to the recovery site. Most fish removed from the garbage cans were lethargic or unresponsive. We moved each fish to a recovery tote to try and clean off their gills, but with no clean running water at the site this meant flushing their gills with dirty water. Most of the fish transferred to the tanks did not recover and it was noted that when the fish were released downstream many were dead. EH crews did not have nets with them upon release to recover the carcasses thus they floated downstream.

Temps in the horseshoe area where fish were being recovered were well over 70°F (21°C) which is above critical temperature thresholds for salmonids. Ambient air temps during this time were 80-83°F (27-28°C). Once all the adults were removed from the horseshoe area of the penstock recovery efforts stopped, and crews packed up to leave. There were many pools within the forebay that were never fished according to EH Fish Biologist due to unsafe conditions within the Forebay.

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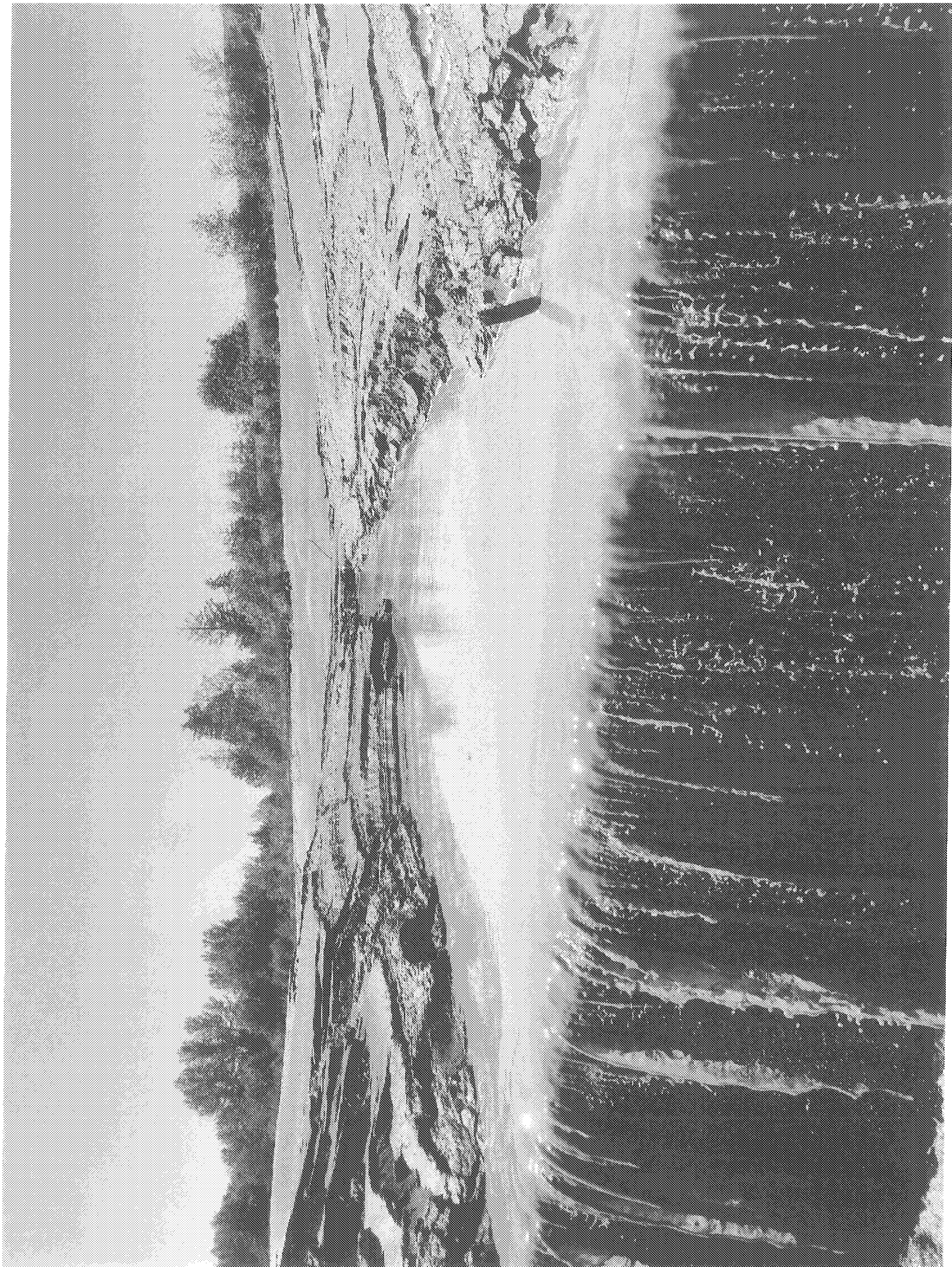












CHINOOK



